CONTENTS OF VOLUME 130

No. 1, SEPTEMBER, 1939

PAGE

KOHN, HENRY I., and KLEIN, J. R. The synthesis of cozymase and of factor V from nicotinic acid by the human erythrocyte *in vitro* and *in vivo* 1

GRAFF, SAMUEL. Glutamic acid in malignant tumors 13

FRUTON, JOSEPH S., and BERGMANN, MAX. On the proteolytic enzymes of animal tissues. I. Beef spleen 19

CHARGAFF, ERWIN. The configuration of glutamic and aspartic acids from pathogenic bacteria (*Phytomonas tumefaciens* and *Corynebacterium diphtheriæ*) 29

PEARLMAN, W. H., and WINTERSTEINER, O. Estrogens with oxygen in Ring B. I. 7-Ketoestrone and 7-hydroxyestrone 35

RAYMOND, ALBERT L., TIPSON, R. STUART, and LEVENE, P. A. The substitution of glucose in position 4. II. 2,3-Diacetyl β-benzylglucoside and its derivatives 47

TIPSON, R. STUART. A note on the action of silver salts of organic acids on bromoacetyl sugars. A new form of tetraacetyl *l*-rhamnose 55

FRIEDEMANN, THEODORE E. The carbohydrate metabolism of *Staphylococcus aureus* 61

TARVER, HAROLD, and SCHMIDT, CARL L. A. The conversion of methionine to cystine: experiments with radioactive sulfur 67

HOFMANN, KLAUS, and BERGMANN, MAX. The specificity of trypsin. II 81

LANFORD, CAROLINE SHERMAN. The effect of orange juice on calcium assimilation 87

MELNICK, DANIEL, and FIELD, HENRY, JR. Chemical determination, stability, and form of thiamine in urine 97

WOOD, JOHN L., and DU VIGNEAUD, VINCENT. Racemization of benzyl-*l*-cysteine, with a new method of preparing *d*-cystine 109

BEACH, ELIOT F., BERNSTEIN, SAMUEL S., HUMMEL, FRANCES C., WILLIAMS, HAROLD H., and MACY, ICIE G. Total sulfur, cystine, and methionine content of blood globins of five mammalian species 115

ENTENMAN, C., CHAIKOFF, I. L., and MONTGOMERY, M. L. The blood lipids of dogs subjected to ligation of the external pancreatic ducts 121

HALD, PAULINE M. The importance of removing phosphorus in the determination of serum sodium 133

KABAT, ELVIN A. A polysaccharide in tumors due to a virus of leucosis and sarcoma of fowls 143

SUMMERSON, WILLIAM H. A simplified test-tube photoelectric colorimeter, and the use of the photoelectric colorimeter in colorimetric analysis 149
LONGENECKER, HERBERT E. Deposition and utilization of fatty acids of low molecular weight; and a fatty acid analysis of coconut oil ... 167
MIRSKY, I. ARTHUR, NELSON, NORTON, and GRAYMAN, ISABELLE. The utilization of acetone bodies. I. The influence of feeding and of glucose in nephrectomized female rats 179
KELSEY, F. E. The use of lipase in lipid analyses. I. Specificity of castor bean lipase 187
KELSEY, F. E. The use of lipase in lipid analyses. II. Specificity of pancreatic lipase 195
KELSEY, F. E. The use of lipase in lipid analyses. III. The action of castor bean and pancreatic lipase on blood neutral fat 199
JOSEPH, NORMAN R. Interaction of amino acids and salts. III. The determination of the activities of calcium, barium, and strontium chloride in amino acid solutions by means of electrodes of the third kind 203
BINKLEY, S. B., MACCORQUODALE, D. W., THAYER, SIDNEY A., and DOISY, EDWARD A. The isolation of vitamin K_1 219
TIPSON, R. STUART, and LEVENE, P. A. Partially O-methylated hexitols. III. Synthesis of 1,3,4,5-tetramethyl *l*-rhamnitol 235
FRAENKEL-CONRAT, HEINZ, SIMPSON, MIRIAM E., and EVANS, HERBERT M. The effect of cysteine on gonadotropic hormones 243
LORING, HUBERT S. Properties and hydrolytic products of nucleic acid from tobacco mosaic virus 251
LAVIN, G. I., LORING, HUBERT S., and STANLEY, W. M. Ultraviolet absorption spectra of latent mosaic and ring spot viruses and of their nucleic acid and protein components 259
DAY, HARRY G., and MCCOLLUM, E. V. Mineral metabolism, growth, and symptomatology of rats on a diet extremely deficient in phosphorus 269
DORFMAN, RALPH I., COOK, J. W., and HAMILTON, JAMES B. Conversion by the human of the testis hormone, testosterone, into the urinary androgen, androsterone 285
ROUTH, JOSEPH I. The decomposition of cysteine in aqueous solution 297
ROSE, WILLIAM C., and RICE, ELDON E. The utilization of certain sulfur-containing compounds for growth purposes 305
DU VIGNEAUD, VINCENT, DYER, HELEN M., and KIES, MARIAN WOOD. A relationship between the nature of the vitamin B complex supplement and the ability of homocystine to replace methionine in the diet 325
REDEMANN, C. E., and DUNN, MAX S. A general method for the synthesis of α-amino acids with ethyl benzamidomalonate 341
DANIELSON, IRVIN S., and HASTINGS, A. BAIRD. A method for determining tissue carbon dioxide 349
BUELL, MARY V. A method for ashing soft tissues preliminary to the determination of cations 357

Block, Richard J., and Bolling, Diana. The microestimation of threonine 365
Fruton, Joseph S., and Lavin, G. I. Ultraviolet absorption spectrum of papain 375
Miller, Benjamin F., Allinson, M. J. Carl, and Baker, Zelma. Studies on the metabolism of creatine and creatinine. I. Specific enzymatic methods for the analysis of creatine and creatinine in tissues 383
Baker, Zelma, and Miller, Benjamin F. Studies on the metabolism of creatine and creatinine. II. The distribution of creatine and creatinine in the tissues of the rat, dog, and monkey 393
Jacobs, Walter A., and Gould, R. Gordon, Jr. The ergot alkaloids. XVIII. The production of a base from lysergic acid and its comparison with synthetic 6,8-dimethylergoline 399
Gould, R. Gordon, Jr., and Jacobs, Walter A. The preparation of certain trimethyleneindole derivatives 407

Letters to the Editors

Phillips, Paul H. Preservation of bull semen 415
Woolley, D. W. Biological responses to the constituent parts of pantothenic acid 417
Hirschmann, H. Androgens from the urine of ovariectomized women 421
Hegsted, D. Mark, Oleson, J. J., Elvehjem, C. A., and Hart, E. B. The "cartilage growth factor" and vitamin B_6 in the nutrition of chicks 423
Haas, Erwin, Horecker, B. L., and Hogness, T. R. The enzymatic reduction of cytochrome C; a new enzyme 425
Altschul, A. M., Abrams, R., and Hogness, T. R. Soluble cytochrome C oxidase 427
Anderson, R. J., and Creighton, M. M. Concerning the synthesis of phthiocol 429
Smith, G. V., Smith, O. W., Huffman, M. N., Thayer, Sidney A., MacCorquodale, D. W., and Doisy, Edward A. The isolation of dihydrotheelin from human pregnancy urine 431
MacCorquodale, D. W., McKee, R. W., Binkley, S. B., Cheney, L. C., Holcomb, W. F., Thayer, Sidney A., and Doisy, Edward A. Identification of vitamin K_1 (alfalfa) 433
White, Julius, and White, Florence R. On the nature of the glutamic acid of malignant tumor tissue 435
McElroy, L. W., and Goss, Harold. Report on four members of the vitamin B complex synthesized in the rumen of the sheep 437

No. 2, October, 1939

Manchester, T. C. Note on the acceleration and retardation of invertase activity 439
Blauch, Mary Brannock, and Koch, F. C. A new method for the determination of uric acid in blood, with uricase 443

Blauch, Mary Brannock, and Koch, F. C. Application of the uricase method to the study of changes *in vitro* in the uric acid content of certain mammalian bloods 455
Blauch, Mary Brannock, Koch, F. C., and Hanke, Martin E. A study of xanthine oxidase of rat blood 471
Darrow, Daniel C., Harrison, Harold E., and Taffel, Max. Tissue electrolytes in adrenal insufficiency 487
Chargaff, Erwin. A study of the spleen in a case of Niemann-Pick disease 503
Greene, R. D. Preparation of vitamin B_6 from natural sources 513
Greenstein, Jesse P. Sulfhydryl groups in proteins. III. The effect on egg albumin of various salts of guanidine 519
Glick, David. Further studies on the specificity of choline esterase 527
Morris, Daniel Luzon, and Morris, Carol Tilden. Glycogen in the seed of *Zea mays* (variety Golden Bantam) 535
Van Slyke, Donald D. Determination of solubilities of gases in liquids with use of the Van Slyke-Neill manometric apparatus for both saturation and analysis 545
Brodie, Bernard B., Brand, Elliott, and Leshin, Seymour. The use of bromide as a measure of extracellular fluid 555
Bollman, Jesse L., and Flock, Eunice V. Pyruvate in working muscles of normal and vitamin B_1-deficient rats 565
Hall, F. G. A spectroscopic method for the determination of oxygen saturation in whole blood 573
Edson, M., and Heard, R. D. H. Hydrolysis of the conjugated estrogens in the urine of pregnant mares 579
Langstroth, G. O., Talbot, N. B., and Fineman, A. Spectrochemical assay of androsterone and dehydroisoandrosterone in simple solutions 585
Perlman, I., and Chaikoff, I. L. Radioactive phosphorus as an indicator of phospholipid metabolism. VIII. The influence of betaine on the phospholipid activity of the liver 593
Schubert, Maxwell P. The combination of cysteine with sugars 601
Sendroy, Julius, Jr. Photoelectric microdetermination of chloride in biological fluids, and of iodate and iodine in protein-free solutions 605
Cohn, Waldo E., and Greenberg, David M. Studies in mineral metabolism with the aid of artificial radioactive isotopes. III. The influence of vitamin D on the phosphorus metabolism of rachitic rats 625
Looney, Joseph M., and Walsh, Anna I. The determination of globulin and albumin in blood serum by the photoelectric colorimeter 635
Berger, Julius, and Johnson, Marvin J. Metal activation of peptidases 641
Berger, Julius, and Johnson, Marvin J. The leucylpeptidases of malt, cabbage, and spinach 655

BALLS, A. K., and LINEWEAVER, HANS. Isolation and properties of crystalline papain 669
MARTIN, L. F., BALLS, A. K., and MCKINNEY, H. H. Protein changes in mosaic-diseased tobacco 687
SCHOENHEIMER, RUDOLF, RATNER, S., and RITTENBERG, D. Studies in protein metabolism. X. The metabolic activity of body proteins investigated with $l(-)$-leucine containing two isotopes 703
STERN, ADOLPH, BEACH, ELIOT F., and MACY, ICIE G. Polarographic microdetermination of cystine in protein hydrolysates 733
SULLIVAN, M. X., HESS, W. C., and SMITH, E. R. A comparison of colorimetric and polarographic methods in relation to the cystine content of insulin 741
SULLIVAN, M. X., and HESS, W. C. The cystine content of insulin. The acid sensitivity of different samples 745
FRIEDEMANN, THEODORE E. The carbohydrate metabolism of streptococci 757
HISEY, ALAN, and MORRISON, DEMPSIE B. The oxygen uptake of dried hemoglobin 763
LEVA, ERNST, and GUEST, GEORGE MARTIN. A method for the determination of total base (sum of sodium, potassium, calcium, and magnesium) in blood 777

Letters to the Editors

ALMQUIST, H. J., and KLOSE, A. A. Antihemorrhagic activity of 2-methyl-1,4-naphthoquinone 787
ALMQUIST, H. J., and KLOSE, A. A. A derivative of vitamin K_1 791

INDEX TO VOLUME 130 795